

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of sharing a signaling bearer connection on an Iu interface for a Multimedia Broadcast Multicast Service (MBMS) service, wherein a Radio Network Controller (RNC) establishes ~~the~~ a shared signaling bearer for MBMS service on the Iu interface, comprising ~~the steps of~~:

(a) receiving, by the RNC, ~~receives a~~ an MBMS Notification message for a certain MBMS service, from a Service General Packet Radio Service (GPRS) Supporting Node (SGSN);

(b) constructing, by the RNC, ~~constructs a~~ an MBMS Service Signaling Connection Control Part (SCCP) Connection Request message according to the contents of the notification message;

(c) sending, by the RNC, ~~sends at the~~ Signaling Connection Control Part (SCCP) Connection Request message to the SGSN, requests to request establish establishment of a an SCCP signaling connection, ~~and then waits for a reply; and~~

(d) receiving, by the RNC, ~~receives a~~ an SCCP Connection Confirmation message from the SGSN, which indicates that a shared Iu signaling connection has been successfully established for the MBMS service ~~which indicates the success of the Iu signaling connection establishment used for this service.~~

2. The method as claimed in Claim 1, wherein ~~the following situation is added to the conditions of the existing SCCP connection establishment initiated by RNC: step (c) further comprises sending, when by the RNC, sends a~~ the MBMS Service Request message, and if there is no corresponding Iu signaling connection for this the MBMS service, initiating, by the RNC, ~~initiates a~~ an SCCP connection establishment procedure.

3. The method as claimed in Claim 1, wherein ~~further comprising: if when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the RNC needs to establish~~ establishes a dedicated Iu signaling connection for the UE, ~~which by includes performing~~ the following steps:

(a) executing ~~SRNC decides to execute~~ a relocation procedure;

(b) ~~constructing~~SRNC constructs a Relocation Demand message and ~~checks-checking~~ whether there is ~~a-an~~ Iu signaling connection for this UE; ~~and if it is absentthere is no Iu signaling connection for the UE,~~ constructing ~~a-an~~ SCCP Connection Request message which includes a Relocation Demand message in its data field~~-is constructed~~;

(c) ~~sending~~SRNC ~~sends-aan~~ SCCP Connection Request message to ~~the~~ SGSN, ~~requests-requesting~~ to establish ~~a-an~~ SCCP signaling connection, and then ~~waits-waiting~~ for a reply; ~~and~~

(d) ~~receiving~~SRNC ~~receives a-an~~ SCCP Connection Confirmation message from ~~the~~ SGSN, ~~which indicates that the shared Iu signaling connection has been successfully established for the MBMS servicewhich indicates the success of the Iu signaling connection establishment used for this service.~~

4. The method as claimed in Claim 1, wherein ~~further comprising: if when a certain-UE has relocated or needs to receive other-a non-MBMS service besides MBMS service or it has moved, the SGSN needs to establish-establishes~~ a dedicated Iu signaling connection for the UE, ~~which includes by performing~~ the following steps:

(a) after receiving ~~a-the~~ SCCP Connection Request message from ~~the~~ RNC, ~~separating~~SGSN separates ~~the-a~~ Radio Access Network Application Part (RANAP) message included in the data fields from the SCCP Connection Request message, ~~and if the RANAP message is a Relocation Demand message, it savesaving~~ the Iu signaling connection ID allocated by ~~the~~ RNC for this UE, ~~allocates-allocating the-an~~ identifier of the signaling connection in ~~the~~ SGSN, and ~~constructs-constructing the {{a}}-SCCP~~ Connection Confirmation message;

(b) ~~SGSN sends-sending a-the~~ SCCP Connection Confirmation message to ~~the~~ RNC;

(c) ~~sending~~SGSN ~~sends~~ a Relocation Request message to ~~the-a~~ new SGSN; ~~and~~

(d) ~~sending,~~ after receiving a Relocation Response message from the new SGSN, ~~the SGSN sends-a~~ Relocation Command message to ~~the~~ RNC via the dedicated Iu signaling connection for the UE.

5. The method as claimed in Claim 1, wherein ~~further comprising: if when a certain-UE has relocated or needs to receive other-a non-MBMS service besides MBMS~~

service or it has moved, ~~the RNC needs to establish~~ establishes a dedicated Iu signaling connection for the UE, ~~which includes~~ by performing the following steps:

(a) ~~when the RNC receives a non Media Access Control (non-MAC) message~~ Service Request ~~message from a UE, it examines~~ examining whether there is a dedicated Iu signaling connection for the UE, ~~and if it is absent there is no dedicated Iu signaling connection for the UE, constructing a~~ an SCCP Connection Request message is ~~constructed and a~~ initiating the SCCP connection establishment procedure ~~is initiated~~ while forwarding the Service Request message to the SGSN, ~~wherein the RNC sends the SCCP Connection Request message to the SGSN and then waits for a reply;~~

(b) ~~if wherein the dedicated Iu signaling connection for the UE has been successfully established when the RNC receives a~~ an SCCP Connection Confirmation message from the SGSN, ~~it indicates that the dedicated Iu signaling connection for this UE has been successfully established.~~

6. The method as claimed in Claim 1, wherein ~~further comprising: if when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the SGSN needs to establish~~ establishes a dedicated Iu signaling connection for the UE, ~~which includes~~ by performing the following steps:

(a) after receiving ~~a~~ an SCCP Connection Request message from the RNC, SGSN ~~separates~~ separating the a Radio Access Network Application Part (RANAP) RANAP message included in the data fields from the SCCP Connection Request message, ~~and if the RANAP message is a Service Request message, it saves~~ saving the an Iu signaling connection identifier ~~ID~~ allocated by the RNC for this UE, ~~allocates~~ allocating the identifier of the signaling connection in the SGSN, and ~~constructs~~ constructing a the SCCP Connection Confirmation message;

(b) ~~SGSN sends~~ sending a the SCCP Connection Confirmation message to the RNC; and

(c) if the service request is accepted, ~~the SGSN returns back~~ returning a Service Acceptance message to ~~MS~~ the UE and ~~sends~~ sending a an Establish Radio Access Bearer (RAB) message via this dedicated Iu signaling connection.

7. The method as claimed in Claim 13, wherein ~~further comprising: in the SRNS relocation flow, if the~~ a target RNC is not incorporated with a certain an MBMS service necessary for the UE after the UE receiving receives a Relocation Request message, ~~it the~~ target RNC sends a-an MBMS Service Request message to the SGSN, thus, During the next step (607, 707, 807), RAB establishment procedure can also establish an RAB for the MBMS service.

8. The method as claimed in Claim 1, wherein the RNC initiates an Iu connection release procedure for the shared MBMS Iu signaling connection, when there is no UE using a certain MBMS service between the RNC and the SGSN, ~~RNC can initiate a Iu connection release procedure.~~

9. The method as claimed in Claim 1, wherein the SGSN initiates a release procedure for the shared MBMS Iu signaling connection, ~~SGSN can initiate a release procedure in the following two situations:~~
—when the SGSN won't no longer receive receives MBMS data any more, ~~a signaling connection and RAB release procedure can be initiated;~~, and
—when no UE uses a certain an MBMS service between the RNC and the SGSN, ~~SGSN can initiate a Iu connection release procedure is not used by a UE.~~

10. A method of sharing a signaling bearer connection on an Iu interface for a Multimedia Broadcast Multicast Service (MBMS) service, wherein a Service General Packet Radio Service (GPRS) Supporting Node (SGSN) ~~SGSN~~ establishes ~~the~~ a shared signaling bearer for the MBMS service, the method ~~includes the following steps comprising:~~

- (a) sending, by the SGSN, sends a-an MBMS Notification message to a Radio Network Controller (RNC) after receiving the data sent from a Gateway General Packet Radio Service (GPRS) Supporting Node (GGSN) ~~GGSN~~, notifies-notifying of relevant MBMS service information, and then waits-waiting for the a response message from the RNC;
- (b) after receiving a Signaling Connection Control Part (SCCP) ~~a-SCCP~~ Connection Request message from the RNC, separating, by the SGSN, separates a Radio Access

Network Application Part (RANAP) the RANAP message included in the data fields from the SCCP Connection Request message and saves saving the an Iu signaling connection identifier ID allocated by the RNC for this the MBMS service, allocates allocating the identifier of the signaling connection in the SGSN, and constructs constructing a Signaling Connection Control Part (SCCP) a SCCP Connection Confirmation message and a an MBMS Radio Access Bearer (RAB) Assignment Request message;

(c) ~~SGSN sends sending, by the SGSN, a the~~ SCCP Connection Confirmation message to the RNC; and

(d) ~~SGSN sends sending, by the SGSN, a the~~ MBMS RAB Assignment Request message to the RNC via the a shared Iu signaling connection-established, if the MBMS RAB Assignment Request message is included in the data field of the SCCP Connection Confirmation message, ~~this step can be omitted.~~

11. The method as claimed in Claim 10, wherein ~~further comprising: if when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, RNC needs to,~~ the RNC establish-establishes a dedicated Iu signaling connection for the UE, which includes by performing the following steps:

(a) after determining to execute a relocation procedure, constructing SRNC decides to execute a relocation procedure;

~~—(b) SRNC constructs a Relocation Demand message and checks-checking whether there is a an Iu signaling connection for this the UE; , and if it is absent there is no Iu signaling connection for the UE, constructing a an SCCP Connection Request message, which includes a Relocation Demand message in its data field, is constructed;~~

(e**b**) sending SRNC sends a the SCCP Connection Request message to the SGSN, requests-requesting to establish a an SCCP signaling connection, and then waits for a reply; and

(d**c**) receiving SRNC receives an the SCCP Connection Confirmation message from the SGSN, which indicates the success-offhat the shared Iu signaling connection has been successfully establishment-established used for this the MBMS service.

12. The method as claimed in Claim 10, wherein ~~further comprising: if when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the SGSN needs to establish~~ establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing the following steps:~~

- (a) ~~after receiving a the SCCP Connection Request message from the RNC, SGSN separates~~ separating the RANAP message included in the data fields from the SCCP Connection Request message, ~~and if when the RANAP message is a Relocation Demand message, it saves~~ saving the Iu signaling connection ~~IDentifier~~ allocated by RNC for this service, ~~allocates~~ allocating the identifier of the signaling connection in SGSN, and ~~constructs~~ constructing ~~a the~~ SCCP Connection Confirmation message;
- (b) ~~SGSN sends~~ sending the SCCP Connection Confirmation message to the RNC;
- (c) ~~SGSN sends~~ sending a Relocation Request message to the new SGSN; and
- (d) ~~After~~ after receiving a Relocation Response message from the new SGSN, ~~SGSN sends~~ sending a Relocation Command message to the RNC via the dedicated Iu signaling connection for the UE.

13. The method as claimed in Claim 10, wherein ~~further comprising: if when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the RNC needs to establish~~ establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing the following steps:~~

- (a) ~~determining, when the RNC receives a non-MAC MBMS message non Media Access Control (non-MAC) Service Request message from the UE, it examines whether there is a dedicated Iu signaling connection for the UE, and if there is no dedicated Iu signaling connection for the UE it is absent, the RNC constructs~~ constructing ~~a an~~ SCCP Connection Request message, ~~initiates~~ initiating ~~a an~~ SCCP connection establishment procedure while forwarding the Service Request message to the SGSN, ~~RNC sends and sending the SCCP Connection Request message to the SGSN and then waits for a reply;~~
- (b) ~~wherein the dedicated Iu signaling connection for the UE has been successfully established if when the RNC receives a the SCCP Connection Confirmation message from the SGSN, it indicates that the dedicated Iu signaling connection for this UE has been successfully established.~~

14. The method as claimed in Claim 10, wherein ~~further comprising: if~~when a certain-UE has relocated or needs to receive ~~either a non-MBMS service besides MBMS service or it has moved,~~ the SGSN ~~needs to establish~~establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing~~ the following steps:

(a) separating, after receiving ~~a the~~ SCCP Connection Request message from the RNC, SGSN ~~separates the~~ RANAP message included in the data fields from the SCCP Connection Request message, ~~if and when~~ the RANAP message is a Service Request message, ~~it saves~~saving the Iu signaling connection ~~IDentifier allocated by RNC for this service,~~ ~~allocates~~allocating the identifier of the signaling connection in the SGSN, and ~~constructs~~constructing a ~~the~~ SCCP Connection Confirmation message;

(b) ~~SGSN~~ sends ~~sending a the~~ SCCP Connection Confirmation message to the RNC; and

(c) returning, if the service request is accepted, ~~the SGSN returns back~~ a Service Acceptance message to ~~MS the~~ UE and ~~sends~~sending a an Establish RAB message via ~~this the~~ dedicated Iu signaling connection.

15. The method as claimed in Claim 10, wherein, ~~in the SRNS relocation flow,~~ if ~~the a~~ target RNC is not incorporated with ~~a certain~~an MBMS service necessary for the UE after the UE receiving receives a Relocation Request message, ~~it the~~ target RNC sends ~~a an~~ MBMS Service Request message to the SGSN, ~~thus, During the next step (607, 707, 807), the RAB establishment procedure can also to establish the RAB for the MBMS service.~~

16. The method as claimed in Claim 10, wherein the RNC initiates an Iu connection release procedure for the shared MBMS Iu signaling connection, when there is no UE using ~~a certain~~an MBMS service between the RNC and the SGSN, ~~RNC can initiate a Iu connection release procedure.~~

17. The method as claimed in Claim 10, wherein the SGSN initiates a release procedure for the shared MBMS Iu signaling connection, SGSN can initiate a release procedure in the following two situations:
when the SGSN won't no longer receive-receives MBMS data any more, a signaling connection and RAB release procedure can be initiated; and
when no UE uses a certain an MBMS service between the RNC and the SGSN, SGSN can initiate an Iu connection release procedure is not used by a UE.

18. A method of sharing a signaling bearer connection on an Iu interface for a Multimedia Broadcast Multicast Service (MBMS), where a Service General Packet Radio Service (GPRS) Supporting Node (SGSN) MBMS service, in which SGSN establishes thea shared signaling bearer for the MBMS service on the Iu interface, the method, comprising the steps of:

- (a) receiving, by the SGSN, receives MBMS data from a Gateway General Packet Radio Service (GPRS) Supporting Node (GGSN)GGSN;
- (b) analyzing, by the SGSN, analyzes the on-goingMBMS service, if there is no shared Iu connection used for this service, it and organizes-organizing a Signaling Connection Control Part (SCCP)SCCP Connection Request message including, which include a-an MBMS Radio Access Bearer (RAB) Assignment Request message in its data field if there is no shared Iu signaling connection used for this service;
- (c) sending, by the SGSN, anthe-sends a SCCP Connection Request message to a Radio Network Controller (RNC), requests-requesting to establish an SCCP signaling connection, and then waits for a reply; and
- (d) SGSN-receives-receiving, by the SGSN, a-an SCCP Connection Confirmation message from the RNC, which indicates that the shared Iu signaling connection has been successfully established for the MBMS servicewhich indicates the success of the shared Iu signaling connection establishment for this service.

19. The method as claimed in Claim 18, wherein the following situation is added to the conditions of the existing SCCP connection establishment initiated by SGSN: step (c) further comprises sending, when by the SGSN, sends a-the MBMS RAB Assignment

Request message, and if there is no Iu signaling connection corresponding to this the MBMS service, the SGSN initiates initiating, by the SGSN, a an SCCP connection establishment procedure, wherein a Radio Access Network Application Part (RANAP) RANAP message is included in the data field of the SCCP Connection Request message.

20. The method as claimed in Claim 18, wherein ~~the method further comprising: if when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the RNC needs to establish~~ establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing~~ the following steps:

(a) ~~SRNC decides after determining~~ to execute a relocation procedure;
~~(b) SRNC constructs constructing~~ a Relocation Demand message and ~~examines determining~~ whether there is ~~a an~~ Iu signaling connection for ~~this the~~ UE, ~~and if it is absent there is no Iu signaling connection for the UE, constructing a the~~ SCCP Connection Request message, which includes a Relocation Demand message in its data field, ~~is constructed;~~

(~~eb~~) ~~SRNC sends sending a the~~ SCCP Connection Request message to ~~the~~ SGSN, ~~requesting to requests to establish establish a the~~ SCCP signaling connection, ~~and then waits for a reply; and~~

(~~dc~~) ~~SRNC receives receiving a the~~ SCCP Connection Confirmation message from ~~the~~ SGSN, ~~which indicates that the shared Iu signaling connection has been successfully established for the MBMS service which indicates the success of the shared Iu signaling connection establishment used for this service.~~

21. The method as claimed in Claim 18, wherein ~~further comprising: if~~when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the SGSN needs to establish establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing~~ the following steps:
after receiving ~~the~~ the SCCP Connection Request message from RNC, SGSN ~~separates~~ separating the a Radio Access Network Application Part (RANAP) RANAP message included in the data field from the SCCP Connection Request messages, and if the RANAP message is a Relocation Demand message, ~~it saves~~ saving the Iu signaling connection identifier ID allocated by the RNC for ~~this~~ the MBMS service, allocates allocating the identifier of the signaling connection in the SGSN, and constructs constructing a the SCCP Connection Confirmation message;
SGSN ~~sends~~ sending a the SCCP Connection Confirmation message to the RNC;
SGSN ~~sends~~ sending a Relocation Request message to ~~the a~~ a new SGSN; and
after receiving a Relocation Response message from the new SGSN, SGSN ~~sends~~ sending a Relocation Command message to the RNC via the dedicated Iu signaling connection for the UE.

22. The method as claimed in Claim 18, wherein ~~further comprising: if~~when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the RNC needs to establish establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing~~ the following steps:
(a) ~~when RNC receives~~ receiving a non Media Access Control (non-MAC) message Service Request message from the UE, and it checks checking whether there is a dedicated Iu signaling connection for the UE, and if it is absent there is no dedicated Iu signaling connection for the UE, RNC constructs constructing a the SCCP Connection Request message and ~~initiates~~ initiating a an SCCP connection establishment procedure while forwarding the Service Request message to the SGSN, and RNC sends sending the SCCP Connection Request message to the SGSN and then waits for a reply, wherein the dedicated Iu signaling connection for the UE has been successfully established when the

~~—(b) if RNC receives a the SCCP Connection Confirmation message from the SGSN, it indicates that the dedicated Iu signaling connection for this UE has been successfully established.~~

23. The method as claimed in Claim 18, wherein ~~further comprising: if~~when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the SGSN needs to establish establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing the following steps:~~

~~(a) after receiving a the SCCP Connection Request message from the RNC, SGSN separates~~ separating the Radio Access Network Application Part (RANAP) RANAP message included in the data ~~fields~~field from the SCCP Connection Request message, ~~and if when the RANAP message is a Service Request message, it saves~~ saving the Iu signaling connection ~~identifier~~ID allocated by the RNC for ~~this~~ the MBMS service, ~~allocates~~ allocating the identifier of the signaling connection in the SGSN, and ~~constructs~~ constructing a the SCCP Connection Confirmation message;

~~—(b) SGSN and sends~~ sending the SCCP Connection Confirmation message to the RNC; ~~, wherein the SGSN returns a Service Acceptance message to the UE and sends an~~ Establish RAB message via the dedicated connection, ~~when~~

~~—(c) if the service request is accepted, the SGSN returns back a Service Acceptance message to MS and sends a Establish RAB message via this dedicated connection.~~

24. The method as claimed in Claim 18, wherein for the shared MBMS Iu signaling connection, when there is no UE using ~~a certain an~~ MBMS service between the RNC and the SGSN, ~~the RNC can initiate~~ initiates a an Iu connection release procedure.

25. The method as claimed in Claim 18, wherein for the shared MBMS Iu signaling connection, ~~the SGSN can initiate~~ initiates a release procedure ~~in the following two situations:~~

~~—~~ when the SGSN no longer receives MBMS data, and when an MBMS service between the RNC and the SGSN is not used by a UE ~~when SGSN won't receive MBMS data any more, a signaling connection and RAB release procedure can be initiated;~~

~~—when no UE uses a certain MBMS service between RNC and SGSN, SGSN can initiate a Iu connection release procedure.~~

26. A method of sharing a signaling bearer connection established by a Radio Network Controller (RNC) on an Iu interface for a Multimedia Broadcast Multicast Service (MBMS) MBMS service, ~~wherein RNC establishes the shared signaling bearer for MBMS service on Iu interface~~, includes the following steps~~the method comprising:~~

- (a) ~~—(a)~~ after receiving a Signaling Connection Control Part (SCCP) a SCCP Connection Request message from a Service General Packet Radio Service (GPRS) Supporting Node (SGSN) SGSN, RNC separates ~~separating, by the RNC, the a Radio Access Network Application Part (RANAP) RANAP message included in the data fields of the SCCP Connection Request message and saves~~ saving the an Iu signaling connection ID identifier allocated by SGSN for this the MBMS service;
- (b) ~~and allocates~~ allocating the identifier of the signaling connection in the RNC and constructs ~~constructing a an SCCP Connection Confirmation message and a an MBMS Radio Access Bearer (RAB) Assignment Response message;~~
- (b) ~~RNC sends~~ sending, by the RNC, a the SCCP Connection Confirmation message to the SGSN; and
- (d) ~~RNC sends~~ sending, by the RNC, a the MBMS RAB Assignment Response message to the SGSN via the a shared Iu signaling connection established, if the MBMS RAB Assignment Response message is included in the data field of the SCCP Connection Confirmation message, this step can be omitted.

27. The method as claimed in Claim 26, wherein ~~further comprising: if~~ when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the RNC needs to establish ~~establishes~~ a dedicated Iu signaling connection for the UE, which includes by performing the following steps:

- (a) ~~SRNC decides~~ determining to execute a relocation procedure;
- (b) ~~SRNC constructs~~ constructing a Relocation Demand message and checks ~~checking~~ whether there is a an Iu signaling connection for this the UE; and if it is absent there is

~~no Iu signaling connection for the UE, constructing the~~ SCCP Connection Request message, which includes a Relocation Demand message in its data field, ~~is constructed;~~

(c) ~~SRNC sends sending the~~ SCCP Connection Request message to ~~the~~ SGSN, ~~requests requesting to establish a the~~ SCCP signaling connection ~~and then waits for a reply; and~~

(d) ~~SRNC receives receiving a the~~ SCCP Connection Confirmation message from ~~the~~ SGSN, ~~which indicates that the shared Iu signaling connection has been successfully established for the MBMS service which indicates the success of the shared Iu signaling connection establishment used for this service.~~

28. The method as claimed in Claim 26, wherein ~~further comprising: if~~ when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the SGSN ~~needs to establish~~ establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing~~ the following steps:

(a) after receiving ~~a the~~ SCCP Connection Request message from ~~the~~ RNC, SGSN ~~separates separating~~ the RANAP message included in the data ~~fields~~ field ~~from the~~ SCCP Connection Request message, ~~if and when~~ the RANAP message is a Relocation Demand message, ~~it saves saving~~ the Iu signaling connection ~~ID identifier~~ allocated by ~~the~~ RNC for ~~this the~~ MBMS service, ~~allocates allocating~~ the identifier of the signaling connection in ~~the~~ SGSN, and ~~constructs constructing a the~~ SCCP Connection Confirmation message;

(b) ~~SGSN sends sending a the~~ SCCP Connection Confirmation message to ~~the~~ RNC;

(c) ~~SGSN sends sending a~~ Relocation Request message to ~~the a~~ new SGSN; and

(d) after receiving a Relocation Response message from the new SGSN, ~~SGSN sends sending~~ a Relocation Command message to ~~the~~ RNC via the dedicated Iu signaling connection for ~~the~~ UE.

29. The method as claimed in Claim 28, wherein ~~the following situation is added to the conditions of the existing SCCP connection establishment initiated by RNC: when~~ the RNC sends ~~a an~~ MBMS Service Demand message, if there is no corresponding Iu signaling connection for ~~this the~~ MBMS service, the RNC initiates ~~a an~~ SCCP connection

establishment procedure, ~~a~~ wherein the RANAP message is included in the data field of the SCCP Connection Request message.

30. The method as claimed in Claim 26, wherein ~~further comprising: if~~ when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the RNC needs to establish establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing the following steps:~~

(a) ~~determining, when RNC receives a non Media Access Control (non-MAC) message~~ Service Request message from the UE, it examines whether there is a dedicated Iu signaling connection for the UE, and if it is absent there is no dedicated Iu signaling connection for the UE, the RNC constructs constructing a the SCCP Connection Request message and initiates initiating a an SCCP connection establishment procedure while forwarding the Service Request message to the SGSN, and RNC sends sending the SCCP Connection Request message to the SGSN and then waits for a reply;

~~—(b) if RNC receives a SCCP Connection Confirmation message from SGSN, it indicates that the dedicated Iu signaling connection for this UE has been successfully established,~~

wherein the dedicated Iu signaling connection for the UE has been successfully established when the RNC receives the SCCP Connection Confirmation message from the SGSN.

31. The method as claimed in Claim 26, wherein ~~further comprising: if~~ when a certain UE has relocated or needs to receive other a non-MBMS service besides MBMS service or it has moved, the SGSN needs to establish establishes a dedicated Iu signaling connection for the UE, ~~which includes by performing the following steps:~~

(a) ~~after receiving a the SCCP Connection Request message from the RNC, SGSN separates~~ separating the RANAP message included in the data field field from the SCCP Connection Request message, and when if the RANAP message is a Relocation Request message, it saves saving the Iu signaling connection ID identifier allocated by the RNC for this the MBMS service, allocates allocating the identifier of the signaling connection

in the SGSN, and ~~constructs~~ constructing a the SCCP Connection Confirmation message; and

~~—(b) SGSN sends~~ sending a the SCCP Connection Confirmation message to the RNC;

~~(c) If the service request is accepted,~~ wherein the SGSN returns back ~~aa~~ a Service Acceptance message to ~~MS~~ the UE and sends ~~a~~ an Establish RAB message via ~~this~~ the dedicated Iu signaling connection.

32. The method as claimed in Claim 27, wherein ~~in SRNS relocation flow,~~ if the ~~source RNC finds~~ determines that ~~the moving~~ a user of the UE is ~~the~~ a last user for a ~~certain~~ an MBMS service between the ~~source RNC~~ and the ~~source SGSN~~ and that the shared Iu signaling connection for ~~this~~ the MBMS service also exists, the ~~source RNC~~ initiates a procedure of releasing the shared Iu signaling connection and ~~the~~ resources on ~~the~~ a user plane.

33. The method as claimed in Claim 32, wherein the release procedure is ~~composed by the following three steps~~ includes:

~~RNC sends~~ sending, by the RNC, a an Iu Release Request message to the SGSN ~~and to requests to a release of~~ the shared Iu signaling connection and the resources on the user plane;

sending, by the SGSN, an Iu Release Command message to the RNC, after receiving ~~a~~ the Iu Release Request message from the RNC, ~~SGSN sends a Iu Release Command message to the source RNC;~~ and

releasing, by the RNC, the corresponding resources and sending an Iu Release Completion message to the SGSN, after receiving the Iu Release Command message from the SGSN, ~~the source RNC releases the corresponding resources and sends a Iu Release Completion message to SGSN;~~

if wherein the release procedure is executed a plurality of times when the UE is the last user of multiple services in the ~~source RNC,~~ the release procedure needs to be executed for multiple times;

~~—this release scheme is also applicable to the situation when the last UE that uses a certain MBMS service between RNC and SGSN quits the service.~~

34. The method as claimed in Claim 32, wherein the release procedure is initiated by the RNC, ~~if when the source-RNC finds-determines~~ that the last UE that uses the MBMS service has ~~left or quitted~~ left the service, and the RNC releases the user plane resources and Iu signaling connection; and ~~then~~ sends a-an MBMS Iu Release Indication message to the old-the previous SGSN; ~~if the UE is the last user of multiple services in the source RNC, the release procedure needs to be executed for multiple times.~~

35. The method as claimed in Claim 34, wherein the MBMS Iu Release Indication message is a connection-oriented message, and the message includes an RAB[[s]] Data Volume Report List and a released RABs list.

36. The method as claimed in Claim 27, wherein ~~in the SRNS relocation flow,~~ ~~if when the SGSN finds-determines~~ that the last UE that uses the MBMS service between ~~it the SGSN and the RNC~~ has ~~left or quitted~~ the service and ~~there still exists a shared Iu signaling connection still exists for this the MBMS service~~, the SGSN initiates a release procedure of the shared Iu signaling connection, the :

SGSN re-sends a-an Iu Release Command message to the RNC and requests to release the shared Iu signaling connection and the resources on [[the]] a user plane;, and after receiving the Iu Release Command message, the source-RNC releases the corresponding resources and sends a-an Iu Release completion-Completion message to SGSN;

wherein the release procedure is executed a plurality of times when the UE is the last user of multiple services in the RNC~~if the UE is the last user of multiple services in the source RNC, the release procedure needs to be executed for several times.~~

37. The method as claimed in Claim 26, wherein for the shared MBMS Iu signaling connection, when there is no UE using ~~a-certain~~ the MBMS service between the RNC and the SGSN, the RNC can initiate-initiates a-an Iu connection release procedure.

38. The method as claimed in Claim 26, wherein for the shared MBMS Iu signaling connection, ~~the SGSN can initiate~~ initiates a release procedure in the following two situations:

when the SGSN no longer receives MBMS data, and when an MBMS service between the RNC and the SGSN is not used by a UE~~when SGSN won't receive MBMS data any more, a signaling connection and RAB release procedure can be initiated;~~
~~when no UE uses a certain MBMS service between RNC and SGSN, both RNC and SGSN initiates an Iu connection release procedure.~~